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MANAGERIAL ECONOMICS

THEORY, APPLICATIONS, AND CASES

SEVENTH EDITION

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MANAGERIAL ECONOMICS

SEVENTH EDITION

To Edwin Mansfield, a pioneer of managerial economics

PREFACE

This edition of *Managerial Economics* represents our third revision since inheriting the text from the late Edwin Mansfield, a master economist and educator. When you inherit a book from another author, it is akin to purchasing his or her house. In a house, tastes and values differ, and the passing of time can cause once-current trends to look outdated. Books have similar features. And, as with a house, it takes the new owner time to make all the desired changes. In each of the two previous revisions, we significantly altered various chapters but not the overall tone of the book. This edition represents our finished house. It is our vision of how to integrate economics into the managerial world.

The three of us teach the Managerial Economics course at The Wharton School of Business. It is required for most MBA students and is taken during their first semesters. Our charge is to show students how to apply economic principles in their future management positions. We have designed this book to make it easier for them to do just that.

The text is structured on the following principles. First, in the managerial world, economic thinking is a component of decision making. Economics is best taught as a decision-making framework. Students must see past the equations and graphs and understand why they need to follow general precepts. For example, the tools of marginal analysis and backward induction need to be in every manager's intellectual toolbox.

Second, managerial economics is integrative in nature. Economic models permeate all business disciplines. We emphasize the integrative nature of economics in this book.

Third, the formal analysis of models adds value to managerial discussions; for without it, perceived knowledge is merely speculative. The managerial world is one of efficiency. Objectivity is generally desired in performance metrics. Our experience is that the objectivity of mathematics brings focus to a business discussion. Its mastery is essential to business decision making.

We recognize that managers are inherently rational. However, managers occasionally make mistakes in judgment. This book is intended to improve their judgment by providing the knowledge to avoid mistakes. We also acknowledge that managers are often faced with situations of conflicting interests. Managers, as agents, face conflicting desires in favoring their own interests over those of shareholders. In the last chapters, we address these difficult issues.

THE SEVENTH EDITION OF *MANAGERIAL ECONOMICS*

We have significantly improved the text in this seventh edition. Our changes follow three broad paths: a re-constructed table of contents; a tighter focus on managerial behavior; and an emphasis on the discrete over the continuous.

Table of Contents

Overall, we reduced the length of the book by more than twenty percent. Most of the reduction comes from eliminating four chapters that were periphery to our focus and were better served by more specialized books—the removed chapters were the ones on optimization techniques, estimating demand functions, forecasting, and industrial innovation. These chapters can still be found on the book's website for any instructor who wishes to use them. We also reduced the number of pages and increasing the clarity of ideas by being more concise. Finally, we dissolved a chapter and spread it throughout the entire book. The world has truly gone global since Professor Mansfield last edited *Managerial Economics*. We now take a global perspective throughout the entire book, rather than confining global issues to a single chapter.

All chapters were revised and had new content added. Much of the new content has a strategic focus, such as the discussions of gift giving and Bertrand pricing behavior. We also added more graphs to visually clarify principles and concepts.

Finally, we rethought how to best integrate principles with examples from the managerial world. We chose to emphasize the strategic nature of these principles. For this reason, our examples are highlighted in boxes titled Strategy Sessions. Each Strategy Session generally tells a story of how managers use economic principles to influence behavior. We hope these sessions help readers to visualize how certain principles are encountered in the managerial world.

Within the text we are also using boxes titled Problem Solved to illustrate how a recently discussed idea is actually used in making decisions. While we do not expect managers to always have such definitive knowledge in making a decision, they do need to understand the underlying dynamics.

Below are brief chapter summaries of what is new in each chapter relative to the last edition.

Chapter 1 – **(Introduction)** We changed the focus of the text from the behavior of organizations to the behavior of individuals within organizations, that is, managers. Our goal is to provide the knowledge that managers need for making decisions. New Strategy Sessions include looking at social consumerism ("Bono sees Red") to examining how the shifts in commodity prices influence consumer behavior ("Effects of High Commodity Prices").

Chapter 2 – (**Demand Theory**) This chapter looks at how changes in sales influence the behavior of managers. New Strategy Sessions include servicing low-profit customers ("The Customer is Always Right—Wrong") and the use of demand elasticity by managers ("Verizon").

Chapter 3 – (**Consumer Behavior and Rational Choice**) We continue by showing managers how aggregate demand is composed of consumer subgroups and how individuals make choices. We then introduce the goal of most market strategies—the capturing of consumer surplus. Here new Strategy Sessions look at manager behavior when choosing between organizational goals ("Managers Trade-off Between Profit and Output"), considering the trade-off between work and leisure ("Do I Stay or Do I Go"), and considering decisions within a global context ("Trade-off Between Risk and Return"). We also added sections to the text that show how managers influence consumer behavior with pricing schemes and in gift giving.

Chapter 4 – (**Production Theory**) Now we move to the supply side and discuss what managers should consider when making output decisions. We also show managers how to create competitive advantages using the economies of scale and scope.

Chapter 5 – (**The Analysis of Costs**) We show managers how to structure costs to move toward efficiency and higher profits. Understanding the nature of costs is essential for managers. Empirically, too many managers choose strategies without a good knowledge of costs. It is difficult to maximize profit in such a state. Because students often ask how managers should estimate cost functions, we move that discussion to a chapter appendix, which can be skipped without disturbing the flow of the text.

Chapter 6 – (**Perfect Competition**) We now apply the knowledge of the first five chapters to managerial behavior in perfectly competitive markets. We use the simple market structure to show managers how to integrate basic concepts like costs, revenues, and prices. Behavior in these markets is later used as a benchmark when we show how market power affects managers' decisions.

Chapter 7 – (**Monopoly and Monopolistic Competition**) Now we examine behavior in market structures where managers have market power. We show managers how to use this power to create competitive advantages for their companies. For example, how they should price to increase profit. One new Strategy Session shows managers how incentives influence managerial behavior ("Franchisees vs. Franchiser"). And, we expand our discussion by showing how managers want to behave when they are the only buyer (monopsony).

Chapters 8 – (**The Managerial Use of Price Discrimination**) We provide a greater focus on pricing strategies by splitting one chapter from the last edition into two chapters. Chapter 8 focuses on the strategies of price discrimination and bundling. We use multiple Strategy Sessions to illustrate how managers use these techniques to increase profit. We discuss the pricing power of a mouse ("That Darling Little Mouse"), the different prices for rental autos in the global market ("Hey Buddy, Want to Rent a Car"), and how managers use pricing to induce behavior from the consumer ("Why Do Your Laundry at 3 AM?").

Chapter 9 – (**Bundling and Intrafirm Pricing**) focuses on the strategy of two-part tariffs and shows managers how to choose efficient intra-firm pricing schemes. Again, we use multiple Strategy Sessions to illustrate concepts. From showing how Costco managers use pricing to capture consumer surplus ("Costco and the Two-Part Tariff"), to giving managers negotiation advice ("When Can You Haggle?"), to considering how human behavior influences the effects of pricing decisions ("Scientific Pricing – Even for Great Art?").

Chapter 10 – (**Oligopoly**) This chapter begins our focus on how managers must explicitly consider the interactive nature of the strategic world. Those managers who fail to develop an interactive mode of thinking will consistently make bad decisions. A new discussion shows managers how to reduce price competition through the use of differentiated products. We also show managers how to reduce the tensions of strictly competitive behavior through their actions (i.e., competing on quantity). Finally, we show how the timing of strategies affects firm payoffs by analyzing both simultaneous and sequential decision making.

Chapter 11 – (**Game Theory**) We focus this chapter on the behavioral aspects of interactive thinking. We use game theory less as a formal framework and more for illustrating why managers need to follow certain strategic principles like assessment and backward induction. We show how game theory can help managers categorize families of decisions, like repeated play, and leverage off their shared characteristics across contexts. Finally, we discuss the importance of reputations both at the personal and firm levels as assets that can generate future profits.

Chapter 12 – (**Auctions**) We show managers how to apply game theoretic principles in auction settings to improve their decision making. For example, in some auction designs, managers have a dominant strategy and do not care what others might bid. We also show managers how they can use auction designs to induce consumers to reveal their preferences prior to purchase. Managers can then use this information when setting prices to increase profit.

Chapter 13 – (**Risk Analysis**) Managers must learn how to integrate risk into their decision making. This chapter discusses basic strategies that managers need to consider. We also focus on the role of risk in determining structural characteristics of the financial crisis that began in 2007. It is impossible for managers to make good decisions if they do not know how risk influences their decision behavior.

Chapter 14 – **(Principal-Agent Issues and Managerial Compensation)** This chapter begins our study of how informational asymmetries affect managers' choices. The new title for this chapter indicates its focus on the effect of corporate incentives and information asymmetries on managerial behavior. The magnitude of how these issues affect corporate governance is easily shown in a series of Strategy Sessions. These sessions look at what shareholders get in return for their payment to managers ("Value of CEO Pay"), how to get board members to think about the long run ("Getting the Board to Focus"), how compensation compares across the globe ("Imitation is the Best Form"), and how incentives change managerial behavior ("The Good and Bad"). In the text, we have a new discussion on why some performance schemes have unintended consequences. Given the role of managers and moral-hazard issues in the current government bail-outs, we use examples to show how moral-hazard concerns changed managerial behavior.

Chapter 15 – **(Adverse Selection)** This chapter continues our look at how informational asymmetries affect managerial choice. It focuses on situations where one party knows more than another about the quality of an asset. While many models predict market failure, we show how managers choose strategies to create similar though different markets. For example, the use of certified warranty programs for pre-owned autos helps managers avoid the predicted market failure for used autos. We use Strategy Sessions to describe the diversity of decisions affected by adverse selection: from the use of store loyalty programs ("How Managers Gather Information") to internet shopping ("Using Search Engines"); from deciding the fate of abandoned property ("Information Asymmetries") to government prescription programs ("Adverse Selection and Government").

Chapter 16 – **(Government and Business)** This chapter shows the effect of government control on managerial behavior. Given the involvement of the U.S. government in the private sector in its bid to stave off financial disaster, it is more important than ever that managers understand the implications of government action. Recognizing the global nature of economies, we have added new sections on trade and trade policy. We also show the effect of government intervention on managerial pricing decisions. Strategy Sessions include a global discussion of anti-trust behavior ("Anti-trust on Both Sides of the Atlantic"), the use of incentives to encourage managers to become whistle blowers ("Making Whistle Blowing Pay"), and the perversity of anti-trust behavior ("From Factories to Breweries").

Focus on Managerial Behavior

A subtle but significant change throughout the book is the shift in focus from firm behavior to managerial behavior. This reflects our greater emphasis on the strategic nature of economics and its role in managerial decisions. We also believe that it more truly represents the causality of "firm" decisions.

Our intent is to show managers the many facets of economic reasoning and how to apply them to the managerial world. For example, managers can use economics to better understand the behavior of others. Another way is in the design of their pricing strategy. A third use is in the design of a compensation scheme. Game theory helps them find the optimal bidding strategy.

We also place great emphasis on explaining how information asymmetries affect managerial decisions. Informational asymmetries are common in the managerial world and managers need to understand how they affect behavior. Incentives, preferences, actions, and beliefs can all change in the presence of these asymmetries.

Discrete, Not Continuous

Most readers would probably think a change in mathematical operations from dP/dQ to $\Delta P/\Delta Q$ is rather subtle. On one level it simply changes the treatment of the material to discrete units, so managers can consider hiring either 5 or 6 new employees, but not 5.5. This subtlety in exposition masks a profound difference in problem-solving methodology, especially to economists. Algebra or calculus—does one trace its heritage to Diophantus or Newton? Clearly, the average college student prefers Diophantus.

However, we also know that some students march to the beat of a different drum. We did and find ourselves writing a book on economics. *Webster's Dictionary* defines a geek as "an expert especially in a technological field." We regard ourselves as geeky economists; after all, we have written a 500-page book on the subject. We understand that most students have no desire to become geeky economists, so the book's main focus is on these students. However, we do not want to ignore those students who aspire to become the next generation of geeky economists. As the older generation, we want to nurture those of the younger one.

To that end, we created what we call the Quant Option[1]. The discussions in these boxed inserts provide a richer mathematical treatment of the material just-presented. Often in them, we examine material using calculus, not algebra. The discussions do not interrupt the flow of the book, so they can be skipped without any penalty in understanding the material.

1. Our thanks to Barry Nalebuff for the name.

BRIEF CONTENTS

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